

may correspond to the one shown in FIG. 30. As shown, the input device 650 includes a housing 654 and a touch pad assembly 656. The media player 652 includes a shell or enclosure 658. The front wall 660 of the shell 658 includes an opening 662 for allowing access to the touch pad assembly 656 when the input device 650 is introduced into the media player 652. The inner side of the front wall 660 includes a channel or track 664 for receiving the input device 650 inside the shell 658 of the media player 652. The channel 664 is configured to receive the edges of the housing 654 of the input device 650 so that the input device 650 can be slid into its desired place within the shell 658. The shape of the channel has a shape that generally coincides with the shape of the housing 654. During assembly, the circuit board 666 of the touch pad assembly 656 is aligned with the opening 662 and a cosmetic disc 668 and button cap 670 are mounted onto the top side of the circuit board 666. As shown, the cosmetic disc 668 has a shape that generally coincides with the opening 662. The input device may be held within the channel via a retaining mechanism such as screws, snaps, adhesives, press fit mechanisms, crush ribs and the like.

[0178] FIG. 36 is a simplified block diagram of a remote control 680 incorporating an input device 682 therein, in accordance with one embodiment of the present invention. By way of example, the input device 682 may correspond to any of the previously described input devices. In this particular embodiment, the input device 682 corresponds to the input device shown in FIGS. 24A-28, thus the input device includes a touch pad 684 and a plurality of switches 686. The touch pad 684 and switches 686 are operatively coupled to a wireless transmitter 688. The wireless transmitter 688 is configured to transmit information over a wireless communication link so that an electronic device having receiving capabilities may receive the information over the wireless communication link. The wireless transmitter 688 may be widely varied. For example, it may be based on wireless technologies such as FM, RF, Bluetooth, 802.11 UWB (ultra wide band), IR, magnetic link (induction) and/or the like. In the illustrated embodiment, the wireless transmitter 688 is based on IR. IR generally refers wireless technologies that convey data through infrared radiation. As such, the wireless transmitter 688 generally includes an IR controller 690. The IR controller 690 takes the information reported from the touch pad 684 and switches 686 and converts this information into infrared radiation as for example using a light emitting diode 692.

[0179] FIGS. 37A and 37B are diagrams of an input device 700, in accordance with an alternate embodiment of the present invention. This embodiment is similar to those shown in FIGS. 22-29, however instead of relying on a spring component of a switch, the input device 700 utilizes a separate spring component 706. As shown, the input device 700 includes a touch pad 702 containing all of its various layers. The touch pad 702 is coupled to a frame 704 or housing of the input device 700 via the spring component 706. The spring component 706 (or flexure) allows the touch pad 702 to pivot in multiple directions when a force is applied to the touch pad 702 thereby allowing a plurality of button zones to be created. The spring component 706 also urges the touch pad 702 into an upright position similar to the previous embodiments. When the touch pad 702 is depressed at a particular button zone (overcoming the spring force), the touch pad 702 moves into contact with a switch

708 positioned underneath the button zone of the touch pad 702. Upon contact, the switch 708 generates a button signal. The switch 708 may be attached to the touch pad 702 or the housing 704. In this embodiment, the switch 708 is attached to the housing 704. In some cases, a seal 710 may be provided to eliminate crack and gaps found between the touch pad 702 and the housing 704. The spring component 706 may be widely varied. For example, it may be formed from one or more conventional springs, pistons, magnets or compliant members. In the illustrated embodiment, the spring component 706 takes the form of a compliant bumper formed from rubber or foam.

[0180] While this invention has been described in terms of several preferred embodiments, there are alterations, permutations, and equivalents, which fall within the scope of this invention. It should also be noted that there are many alternative ways of implementing the methods and apparatuses of the present invention. It is therefore intended that the following appended claims be interpreted as including all such alterations, permutations, and equivalents as fall within the true spirit and scope of the present invention.

What is claimed:

1. A portable electronic device, comprising:
 - a housing; and
 - a non-rotatable circular input assembly accessible through an opening in the housing, the non-rotatable circular input assembly including
 - a capacitive ring-shaped touch area configured for detecting a sliding touch of an object along the capacitive ring-shaped touch area, and
 - a central input area located at a center of the capacitive ring-shaped touch area;
 wherein the non-rotatable circular input assembly, including the capacitive ring-shaped touch area and the central input area, is configured for translating in a z-direction with respect to the housing and generating a press input when pressure in the z-direction is applied to the non-rotatable circular input assembly.
2. The portable electronic device of claim 1, the capacitive ring-shaped touch area further configured with a plurality of zones, each zone for generating a different input signal when touched.
3. The portable electronic device of claim 1, the capacitive ring-shaped touch area further configured for generating an input signal when tapped.
4. The portable electronic device of claim 1, further comprising one or more switches coupled to the non-rotatable circular input assembly, the one or more switches configured for activating when the pressure in the z-direction is applied to the non-rotatable circular input assembly.
5. The portable electronic device of claim 1, the capacitive ring-shaped touch area including a touch sensing electrode layer.
6. The portable electronic device of claim 1, wherein the housing includes first notches configured for preventing rotation of the circular input assembly.
7. The portable electronic device of claim 1, further comprising a processor communicatively coupled to the ring-shaped touch area and programmed for executing a zooming operation upon detecting the sliding touch of the object along the ring-shaped touch area.
8. The portable electronic device of claim 1, further comprising a processor communicatively coupled to the ring-shaped touch area and programmed for executing a